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EXAMINER
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ROSSI, JESSICA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/509,493

Applicant(s)

OKINO ET AL.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7/22/04, Amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-13, 18-21 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Dictionary.com printout.

## DETAILED ACTION

### *Response to Amendment*

1. This action is in response to the amendment dated 7/22/04. Claims 10 and 22 were canceled.
2. It is noted that the limitations from claim 10 (now cancelled) were added into claim 12 and therefore no new matter has been added to this claim.
3. It is noted that support for the resin being extruded “directly” onto the peripheral edge of the panel can be found on p. 17, line 25 of the specification.

### *Election/Restrictions*

4. Amended claims 14-17 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

**Species A** (appears to be amended claims 14-17), drawn to extruding the resin directly onto (line 15 of claim 14) the peripheral edge of the panel as shown in Figure 4 and as disclosed on p. 11, line 26 – p. 12, line 3 and p. 17, lines 23-25 of the specification.

**Species B** (appears to be claims 18-21), drawn to extruding the resin onto the peripheral edge of the panel (line 18 of claim 18), drawing the extruded resin into a pressing member (line 6 of claim 18), and unifying the extruded resin to the peripheral edge with the pressing member (lines 9-10 of claim 18) as shown in Figure 11 and as disclosed on p. 17, line 25 – p. 18, line 3 of the specification.

Since applicant has received an action on the merits for the originally presented invention (Species B), the newly presented invention (Species A) has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-17 are withdrawn

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from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Objections***

5. Claims 13 and 18 are objected to because of the following informalities:

Claim 13, line 1: "material" should be deleted and --frame-- inserted.

Claim 18, line 12: --;-- should be inserted after "die"

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 11-13 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 11 and 12, the preamble recites "A method for forming a resinous frame" but the body of the claim fails to recite a step of forming the frame. Therefore, it is unclear as to whether the recited method steps actually form a frame. Applicant is asked to clarify. It is suggested to amend the claims to positively recite a step of forming the frame in the body of the claims. In claim 11, it is suggested to amend the claim to state --thereby forming the frame-- after "nozzle" in line 4. In claim 12, it is suggested to amend the claim to state --thereby forming the frame-- after "nozzle" in line 5.

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With respect to claim 11, it is unclear if “a resinous material” in line 5 is different from “a resinous material” in line 2. Applicant is asked to clarify. It is suggested to change “a resinous material” to --the resinous material-- in line 5.

With respect to claim 18, it is unclear if “a resinous material” in line 11 is different from “a resinous material” in line 3. Applicant is asked to clarify. It is suggested to change “a resinous material” to --the resinous material-- in line 11.

Also with respect to claim 18, it is unclear as to how the resinous material can be extruded “onto” (line 18) the peripheral edge of the panel when a pressing member is used to unify the “extruded and formed” resinous material to the peripheral edge (lines 9-10). According to the specification, the resin material is extruded to form a frame which is then pressed onto the periphery of the panel by the pressing member (Figure 11; p. 17, line 25 – p. 18, line 3). Applicant is asked to clarify. It is suggested to delete “onto the peripheral edge of the panel” from line 18.

\*Note: It appears Applicant has mixed up the different embodiments set forth in Species A and B by combining extruding the resin onto the peripheral edge of the panel with unifying the extruded and formed resin to the peripheral edge of the panel using the pressing member. If Applicant agrees with the rejection set forth in the previous paragraph and proceeds to make the suggested changes to claim 18, claim 23 will then be grouped with the non-elected Species A in any subsequent office actions.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Biffar (DE 3843342; of record).

With respect to claim 11, Biffar teaches a method comprising extruding a resinous material from die 25 with a nozzle 26 having a certain cross-sectional shape to that the resinous material is formed with, and retains, a certain cross-sectional shape of the nozzle (Figure 1; p. 3, 1<sup>st</sup> paragraph; p. 4, 4<sup>th</sup> paragraph). The reference teaches supplying the resinous material through a hopper of an injection machine 2 provided upstream of the die, using a metering screw to feed a certain amount of the resin into a plunger chamber 4, 5 of the injection machine, and using a plunger 14, 14.1 at a certain pressure to inject the resin toward the die so as to extrude the resin through the nozzle of the die (Figure 1; p. 4, 3<sup>rd</sup> paragraph).

It is noted that the language in the preamble (“for forming a resinous frame”) just states the purpose of the claimed method without the recited purpose resulting in a manipulative difference between the claimed invention and the prior art; therefore, the preamble does not further limit the claim (MPEP 2111.02, p. 2100-51), especially since a step for making the frame is not positively recited in the body of the claim.

10. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Lenhardt (US 5462199; of record).

With respect to claim 12, Lenhardt teaches a method comprising extruding, not into a mold, a resinous material from a die with a nozzle 10 having a certain cross-sectional shape so that the resinous material is formed with a certain cross-sectional shape substantially conforming

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to the cross-sectional shape of the nozzle (Figure 2; column 5, lines 31-37; column 8, lines 17-28). The reference teaches injecting, with an injection machine 1 having a piston 2 (note Dictionary defines a plunger as a piston) that is provided upstream of the die, the resinous material toward the die so that the resinous material is extruded through the die (Figure 2; column 9, lines 44-50; column 11, lines 8-68). The reference teaches a resinous material flow controller 44 provided between the injection machine and the nozzle wherein the controller is used to control an injection amount of resinous material per unit time (Figure 1; column 10, lines 28-30).

It is noted that the language in the preamble (“for forming a resinous frame”) just states the purpose of the claimed method without the recited purpose resulting in a manipulative difference between the claimed invention and the prior art; therefore, the preamble does not further limit the claim (MPEP 2111.02, p. 2100-51), especially since a step for making the frame is not positively recited in the body of the claim. However, the skilled artisan reading the Lenhardt reference as a whole would have appreciated that some of the products made by the disclosed method would be considered frames (column 5, lines 35-37).

11. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (US 4478775; of record).

With respect to claim 12, Endo teaches a method comprising extruding, not into a mold, a resinous material from a die 7 with a nozzle having a certain cross-sectional shape so that the resinous material is formed with a certain cross-sectional shape substantially conforming to the cross-sectional shape of the nozzle (column 2, lines 33-35). The reference teaches injecting, with an injection machine (reference numbers 1-6) having a plunger 5 that is provided upstream

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of the die 7, the resinous material toward the die so that the resinous material is extruded through the die (Figure 1; column 2, lines 62-66). The reference teaches a resinous material flow controller 13 provided between the injection machine and the nozzle wherein the controller is used to control an injection amount of resinous material per unit time (Figure 1; column 2, lines 36-49).

It is noted that the language in the preamble (“for forming a resinous frame”) just states the purpose of the claimed method without the recited purpose resulting in a manipulative difference between the claimed invention and the prior art; therefore, the preamble does not further limit the claim (MPEP 2111.02, p. 2100-51), especially since a step for making the frame is not positively recited in the body of the claim.

***Claim Rejections - 35 USC § 103***

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 11, 13, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al. in view of Todaka et al. (US 5807588; of record).

With respect to claim 11, Endo teaches a method comprising extruding a resinous material from die 7 with a nozzle having a certain cross-sectional shape to that the resinous material is formed with, and retains, a certain cross-sectional shape of the nozzle (Figure 1; column 2, lines 30-35). The reference teaches supplying the resinous material through a volume feeder 2 of an injection machine (reference numbers 1-6) provided upstream of the die (column 2, lines 54-56), using a metering screw 1b to feed a certain amount of the resin into a plunger chamber 5 of the injection machine (column 2, lines 23-24), and using a plunger at a certain



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pressure to inject the resin toward the die so as to extrude the resin through the nozzle of the die (column 2, lines 30-35 and 62-65).

It is noted that the language in the preamble (“for forming a resinous frame”) just states the purpose of the claimed method without the recited purpose resulting in a manipulative difference between the claimed invention and the prior art; therefore, the preamble does not further limit the claim (MPEP 2111.02, p. 2100-51), especially since a step for making the frame is not positively recited in the body of the claim.

Endo is silent as to the volume feeder 2 being a hopper. However, Endo teaches supplying the resin to the screw extruder by a feeder 2, which can be any type of feeder (column 2, lines 54-57). Therefore, it would have been obvious to the skilled artisan at the time the invention was made to use a hopper because such is a known feeder in the art for supplying resin to a screw extruder, as taught by Todaka (Figure 1; column 6, lines 60-65), wherein such a feeder works well with a screw extruder.

Regarding claim 13, Endo teaches a flow controller 13 provided between the injection machine and the nozzle wherein the controller controls an injection amount of the resin per unit time (Figure 1; column 2, lines 36-49).

Regarding claim 23, Endo teaches extruding a variety of products including sheets, films, and many others (column 2, line 67 – column 3, line 2). Therefore, it would have been obvious to extrude the resinous material of Endo onto a panel because such is known in the art, as taught by Todaka.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 5795421; of record) in view of Endo et al.

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With respect to claim 12, Takashi is directed to a method for forming a resinous frame 17 on a panel 22 useable in the automotive industry. The reference teaches extruding, not into a mold, a resinous material 16 from a die 14 having a nozzle with a certain cross-sectional shape that is imparted to the resinous material (Figure 1; column 3, lines 7-10; column 2, lines 28-45). The reference teaches injecting the resinous material toward the die from an extruder 12 located upstream of the die (Figure 1). However, the reference fails to further define the type or components of the extruder and therefore is silent as to a plunger while also being silent as to a flow controller.

It is known in the art to extrude a resinous product having **uniform size and shape** (i.e. piping, sheet, film, "many others"; column 2, lines 67-68) by injecting resin toward a die 7 having a particular cross-section using an injection machine comprising a screw extruder 1 and a plunger 5 provided upstream of the die (column 2, lines 62-66), as taught by Endo (Figure 1; column 2, lines 20-66).

The reference addresses problems in the prior art associated with using a screw extruder alone. These problems stem from varying amounts of resin coming out of the extruder (called "surging") thereby affecting the uniformity of the final product (column 1, lines 15-22). In the past, these problems were corrected by varying the speed of the screw extruder (column 1, lines 26-28). However, changing the speed of the screw extruder changes the temperature within the extruder, which results in a change of the melting temperature of the resin; therefore, it becomes very difficult to provide a sufficient checking of surging on products exiting the die (column 1, lines 38-42).

By using the screw extruder in conjunction with a plunger, Endo is able to continuously inject a constant amount of resin toward the die without having to adjust the speed of the screw extruder, since the plunger can be controlled so as to correct for variations in the amount of resin fed to it by the screw extruder thereby ensuring that a product having uniform size and shape exits the die (column 2, lines 36-49).

Therefore, it would have been obvious to the skilled artisan at the time the invention was made to use an injection machine comprising a screw extruder and plunger for the generic extruder of Takahashi because such is known in the art for injecting resin toward a die having a cross-sectional shape for extruding simple, long profiles and would allow for the formation of a resinous frame having uniform shape and size without having to resort to the undesirable alternative of adjusting the speed of the extruder itself, as taught by Endo (column 1, lines 15-22 and 38-42).

As for a resinous material flow controller provided between the injection machine and the nozzle wherein the controller controls an injection amount of resin per unit time, Endo teaches such a controller 13 (Figure 1; column 2, lines 36-49).

15. Claims 11, 13, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Endo et al. and further in view of Todaka et al.

With respect to claim 11, most of the limitations were addressed above with respect to claim 12.

As to the limitation of the resinous material retaining a certain cross-sectional shape of the nozzle, Takahashi teaches such (Figure 1).

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As to the limitation of supplying the resin through a hopper, Endo teaches supplying the resin to the screw extruder by a feeder 2, which can be any type of feeder (column 2, lines 54-57). Therefore, it would have been obvious to the skilled artisan at the time the invention was made to use a hopper because such is known feeder in the art for supplying resin to a screw extruder, as taught by Todaka (Figure 1; column 6, lines 60-65), wherein a hopper works well with a screw extruder.

As to the limitation of feeding the resin into the plunger chamber by means of a metering screw, Endo teaches such (column 2, lines 23-24).

As to injecting the resin toward the die with the plunger at a certain pressure, Endo teaches such (column 2, lines 30-35).

Regarding claim 13, Endo teaches a resinous material flow controller 13 provided between the injection machine and the nozzle wherein the controller controls an injection amount of resin per unit time (Figure 1; column 2, lines 36-49).

Regarding claim 23, Takahashi teaches extruding the resin onto the panel (note Figure 1 of reference almost identical to Figure 11 of present invention where present specification at p. 9, lines 1-13 talks about extruding the resin "onto the peripheral edge of the panel" when discussing the embodiment having the pressing member shown in Figure 11).

16. Claims 12-13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Endo et al., Todaka et al., and further in view of Lenhardt.

With respect to claims 12-13, it is noted the examiner's position in paragraphs 14-15 is that the Endo reference teaches the controller 13 being provided between the injection machine

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and the nozzle. If this is not the case, the examiner directs Applicant's attention to the rejection set forth below.

The resinous frame extruding art acknowledges the need to decrease the peripheral speed of the panel when changing from the straight edge portions of the panel to the corner portions while at the same time controlling the speed of the screw extruder so that "the discharged amount of extrusion material is relatively changed to follow up changes in the peripheral speed" in order to produce a frame having **uniform size and shape**, as taught by Todaka (column 2, lines 6-14; column 6, line 60 – column 7, line 52).

Todaka achieves this objective by controlling the speed of the screw extruder to thereby control the amount of resin injected from the extruder in response to a relative moving speed of the panel (column 11, lines 23-34). In doing so, Todaka provides a flow controller 17 between the extruder 15 and nozzle 4 (Figure 1).

Although Todaka teaches controlling the speed of the extruder to control the amount of resin injected, it is the examiner's position that one of ordinary skill in the art would readily recognize that Todaka's more general teaching to **control the injection amount of resin in response to the relative moving speed of the panel** provides obvious motivation for controlling the injection amount in such a process **no matter what extrusion apparatus is employed**.

Therefore, as it is known that the injected amount of resin from an extruder is dependent on the pressure of extruding an extrusion material supplied by a molding machine actuator (Todaka, column 2, lines 15 – 18), it would have been obvious to one of ordinary skill in the art at the time of the invention to control the moving speed of the plunger in a combination plunger

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and screw extrusion apparatus, wherein one skilled in the art would readily recognize that the plunger is in control of the pressure of the discharging resin material.

Furthermore, since Endo teaches the plunger being controlled in a manner necessary to produce an extruded product having a uniform size and shape, it would have been obvious to the skilled artisan at the time of the invention to control the speed of the plunger in the combination plunger and screw extrusion apparatus of Takahashi in view of Endo such that the extrusion pressure is controlled in response to the relative moving speed of the panel with a controller provided between the injection machine and nozzle because such a control scheme is known in the art, as taught by Todaka, wherein adjusting the amount of resin extruded at the curved and straight portions of the panel is necessary to produce a frame having uniform size and shape (Todaka; column 2, lines 46-50) without having to resort to the undesirable alternative of adjusting the speed of the extruder itself (Endo; column 1, lines 38-42).

The skilled artisan would especially have been motivated to control the plunger of Takahashi in view of Endo in the manner disclosed by Todaka in light of the fact that it is known in the automotive industry to apply sealants and/or adhesives in the form of a continuous strip to both curved and straight portions of a panel using a combination plunger and nozzle apparatus (piston 2 = plunger, nozzle 10), wherein a controller is used to control the plunger to increase or decrease the discharging rate of the material being discharged from the nozzle, as taught by Lenhardt (Figures 1-2, 6; column 1, lines 31-45; column 5, lines 31-42; **column 7, lines 40-43**; column 8, lines 9-29; **column 10, lines 20-30**; column 12, lines 41-58).

NOTE: The examiner recognizes that Endo teaches controlling the plunger to inject a constant amount of resin to the die, but that is ONLY because the products being extruded are

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simple and linear, whereas Takahashi and Todaka are extruding a curved frame onto a moving panel having straight sides and curved corners. Therefore, the processes of Takahashi and Todaka require slowing down and speeding up the panel along the curved and straight portions thereof so that the amount of material extruded must be varied accordingly to produce a uniform frame. Therefore, since Endo and Todaka are BOTH directed to extruding a uniform product, the skilled artisan would be motivated to manipulate/control the plunger of Endo in a manner necessary to produce a uniform product, wherein the case of Takahashi that requires controlling the plunger to vary the amount of resin injected in response to the speed of the panel.

With respect to claim 18, most of the limitations were addressed above with respect to claim 13 in this paragraph, claim 11 in paragraph 15, and claim 23 in paragraph 15.

As for drawing the extruded and formed resin material into a pressing member, Takahashi teaches such a pressing member 20 (Figure 1).

As for relatively moving the panel and pressing member so that the pressing member moves along the panel edge, Takahashi teaches such (Figure 1; column 3, lines 14-22).

As for unifying, during relatively moving, the extruded and formed resinous material to the peripheral edge with the pressing member, Takahashi teaches such (Figure 1).

As for controlling the injection amount of the resin in response to a relative moving speed between the peripheral edge of the panel and the die, Todaka teaches such.

Regarding claim 19, most of the limitations were addressed above with respect to claim 13. As for the resin flow controller being used to restrain an excess discharge in response to the relative moving speed between the panel and die, Todaka teaches such (see previous paragraphs relating to Todaka).

Regarding claims 20-21, Todaka teaches reducing the speed of the panel around its corners and in connection therewith, reducing the speed of the extrusion apparatus's actuator which in turn decreases the amount of resin supplied through the nozzle as the pressure of the extruder is directly proportional to the speed of the workpiece (column 7, line 55 – column 10, line 10). Todaka teaches raising the speed of the panel at its sides and in connection therewith, raising the speed of the extrusion apparatus's actuator which in turn increases the amount of resin supplied through the nozzle as the pressure of the extruder is directly proportional to the speed of the workpiece (column 7, line 55 – column 10, line 10).

***Response to Arguments***

17. Applicant's arguments filed 7/22/04 have been fully considered but they are not persuasive.

18. On page 10 of the arguments, Applicant argues that Lenhardt teaches a buffer for controlling a metering rate of a pasty compressible substance of high viscosity so that the metering rate can exactly be controlled close to the nozzle (and also happens to include a plunger) but has nothing to do with screw compressors.

First, screw compressors are not recited in any of the pending claims and therefore any arguments pertaining thereto are not commensurate with the scope of the claimed invention. It is noted claim 11 recites a "metering screw" where Lenhardt was only used as a secondary reference to reject claim 13 (which depends from claim 11) in paragraph 16 above to show it being known in the automotive industry to apply sealants and/or adhesives in the form of a continuous strip to both curved and straight portions of a panel using a combination plunger and nozzle apparatus (piston 2 = plunger, nozzle 10), wherein a controller is used to control the



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plunger to increase or decrease the discharging rate of the material being discharged from the nozzle.

19. On page 10 of the arguments, Applicant argues that Todaka and Endo operate at cross purposes to one another in that Todaka desires to vary the extruding pressure so as to follow up workpiece travel speed, whereas Endo desires to eliminate any such variations, instead desiring to “continuously send a constant amount of molten thermoplastic material to a die” by eliminating variation in the extruding pressure by providing the plunger pump – the very device that the examiner suggests using to create variations in the pressure.

Endo is directed to extruding products having uniform size and shape wherein the products are **simple and linear** because they are not being extruded onto a moving object having straight and curved portions. To achieve this, Endo teaches using a plunger to inject a constant amount of resin to the die by increasing or decreasing the amount of resin supplied by the extruder in response to detected pressure variations; however, the skilled artisan would have appreciated the plunger being capable of varying the amount of resin injected to the die.

Todaka is directed to extruding a frame having uniform size and shape wherein the frame is **complex and curved** because it is extruded onto a moving panel having straight edges and curves. This requires slowing down and speeding up the panel at these different areas so that the amount of resin extruded must be varied accordingly in order to produce a frame of uniform size and shape. The examiner appreciates that Todaka adjusts the speed of the extruder to control the amount of resin injected into the die; however, the skilled artisan would have readily appreciated that Todaka’s more general teaching to control the injection amount of resin in response to the

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relative moving speed of the panel provides obvious motivation for controlling the injection amount in such an extrusion process no matter what extrusion apparatus is employed.

Therefore, as it is known that the injected amount of resin from an extruder is dependent on the pressure of extruding an extrusion material supplied by a molding machine actuator (Todaka, column 2, lines 15 – 18), it would have been obvious to one of ordinary skill in the art at the time of the invention to control the moving speed of the plunger in a combination plunger and screw extrusion apparatus, wherein one skilled in the art would readily recognize that the plunger is in control of the pressure of the discharging resin material.

One skilled in the art would have appreciated the need to vary the amount of resin injected into the die of Takahashi to compensate for changes in the speed of the panel as the die transitions between the straight and curved portions of the panel in order to produce a complex and curved frame having uniform size and shape. Therefore, since Endo teaches the plunger being controlled in a manner necessary to produce an extruded product having uniform size and shape, it would have been obvious to the skilled artisan at the time of the invention to control the speed of the plunger in the combination plunger and screw extrusion apparatus of Takahashi in view of Endo such that the extrusion pressure is controlled in response to the relative moving speed of the panel with a controller provided between the injection machine and nozzle because such a control scheme is known in the art, as taught by Todaka, wherein adjusting the amount of resin extruded at the curved and straight portions of the panel is necessary to produce a frame having uniform size and shape (Todaka; column 2, lines 46-50) without having to resort to the undesirable alternative of adjusting the speed of the extruder itself (Endo; column 1, lines 38-42).


20. On pages 10-11, Applicant's arguments pertain to claim 14. It is noted this claim is withdrawn from further consideration for the reason set forth in paragraph 4 above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine R. Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jessica L. Rossi  
Patent Examiner  
Art Unit 1733